

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Christoph BENDER

Application No.: [to be assigned]

Filing Date: [on even date herewith]

For: PRODUCTION SYSTEM FOR THE
MANUFACTURE OF PRODUCTS

Art Unit: [to be assigned]

Examiner: [to be assigned]

Attorney Ref. No.: 003-077

PRELIMINARY AMENDMENT

Mail Stop Patent Application

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Prior to taking up this new patent application for action on the merits, please
amend the application as follows.

IN THE CLAIMS:

*Kindly rewrite Claims 1-19 as follows (please note that double brackets ("[[]]")
have been used to delete some text):*

1. (Currently Amended) A production system for the ~~series~~serial manufacture of products, comprising:
 - [[-]] ~~having~~ at least one processing device (2) for the automatic processing of products, the processing device (2), ~~as a function of control commands~~, actuating at least one tool for processing one of the products [[,]] as a function of control commands;
 - [[-]] ~~having~~ at least one measuring device (3) for the automatic measuring of at least one geometric actual dimension (15) at one of the products processed by the processing device [[,]];
 - [[-]] ~~having~~ a correcting device (4) ~~which is coupled to the processing device (2) and to the measuring device (3) and which compares the at least one measured actual dimension (15) with a preset target dimension (8) which lies within a tolerance interval (9) having an upper tolerance limit (10) and a lower tolerance limit (11), the correcting device (4) intervening configured and arranged to intervene in a corrective manner in the control commands of the respective tool if the actual dimension (15) lies outside an intervention interval (12) which lies with an upper intervention limit (13) and with a lower intervention limit (14) within the tolerance interval (9).~~
2. (Currently Amended) The production system as claimed in claim 1, ~~characterized in that wherein~~ the processing device (2) is ~~designed configured and arranged~~ for the automatic machining of products and, ~~as a function of control commands, actuates to actuate~~ at least one cutting tool for machining one of the products as a function of control commands.
3. (Currently Amended) The production system as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the correcting device (4) ~~permits is configured and arranged to permit~~ a preliminary operating mode (17) in which the correcting device (4) orients the intervention interval (12) centrally to the target dimension (8) or centrally to a predetermined cumulative tolerance (21) to be adhered to by the current production batch with regard to the actual dimension ~~(15)~~.

4. (Currently Amended) The production system as claimed in ~~one of claims 1 to 3~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a preliminary operating mode (17) in which the correcting device (4) ~~keeps the intervention limits (13, 14) constant.~~

5. (Currently Amended) The production system as claimed in ~~one of claims 1 to 4~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a preliminary operating mode (17) in which the correcting device (4) ~~corrects the control commands if the actual dimension lies outside the intervention interval,~~ irrespective of whether the actual dimension (15) is within or outside the tolerance interval (9), ~~corrects the control commands if the actual dimension (15) lies outside the intervention interval (12).~~

6. (Currently Amended) The production system as claimed in ~~one of claims 1 to 5~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a preliminary operating mode in which the correcting device (4) ~~determines every corrective intervention with reference to the current actual dimension (15) irrespective of preceding actual dimensions (15) and/or, corrective interventions (16), or both.~~

7. (Currently Amended) The production system as claimed in ~~one of claims 1 to 6~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a main operating mode (18) in which the correcting device (4) ~~determines the current corrective interventions (16) with reference to the current actual dimension (15) and as a function of preceding actual dimensions (15) and/or, corrective interventions (16), or both.~~

8. (Currently Amended) The production system as claimed in ~~one of claims 1 to 7~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a main operating mode (18) in which the correcting

device (4), in the event of the actual dimension (15) lying within the tolerance interval (9), produces different corrective interventions (16) than in the event of the actual dimension (15) lying outside the tolerance interval (9).

9. (Currently Amended) The production system as claimed in ~~one of claims 1 to 8~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a main operating mode (18) in which the correcting device (4) automatically varies the intervention limits (13, 14) as a function of preceding actual dimensions (15) ~~and/or~~, corrective interventions (16), or both.

10. (Currently Amended) The production system as claimed in claim 9, ~~characterized in that wherein~~ the correcting device (4) ~~reduces is~~ configured and arranged to:

reduce the intervention limits (13, 14) if the number of corrective interventions (16) and/or their, the magnitude of the corrective interventions, or both decreases at successive actual dimensions (15), and/or in that the correcting device (4) increases;

increase the intervention limits (13, 14) if the number of corrective interventions (16) and/or their, the magnitude of the corrective interventions, or both increases at successive actual dimensions (15);

or both.

11. (Currently Amended) The production system as claimed in ~~one of claims 1 to 10~~ Claim 1, ~~characterized in that wherein~~ the correcting device (4) ~~permits is~~ configured and arranged to permit a main operating mode (18) in which the correcting device (4) orients the intervention interval (12) eccentrically to the target dimension (8).

12. (Currently Amended) The production system as claimed in claim 11, ~~characterized in that wherein~~ the correcting device (4) is configured and arranged, in the main operating mode (18), ~~orients to orient~~ the intervention interval (12) eccentrically to the target dimension (8) until a predetermined cumulative tolerance (21) to be adhered to by the current production batch with regard to the actual dimension (15) is achieved, and

to orient the intervention interval (12) ~~is oriented~~ centrally to the target dimension (8) as soon as the cumulative tolerance (21) is achieved.

13. (Currently Amended) The production system as claimed in claim 11 ~~or 12~~, ~~characterized in that~~ wherein the correcting device (4) ~~sets~~ is configured and arranged to set the eccentricity with which the intervention interval (12) deviates from the target dimension (8) as a function of the cumulative tolerance (21) while taking into account the preceding actual dimensions ~~(15) and/or~~, corrective interventions (16), or both.

14. (Currently Amended) The production system as claimed in claim 13, ~~characterized in that~~ wherein the correcting device (4) ~~takes~~ is configured and arranged to take into account a tool change when determining the corrective intervention ~~(16)~~.

15. (Currently Amended) The production system as claimed in claim 14, ~~characterized in that~~ wherein the correcting device (4), ~~when determining the corrective intervention (16), takes~~ is configured and arranged to take into account a predetermined correction limiting factor which presets a maximum corrective quantity when determining the corrective intervention.

16. (Currently Amended) The production system as claimed in claim 15, ~~characterized in that~~ wherein the correcting device (4) ~~takes~~ is configured and arranged to take into account the correction limiting factor only when the current actual dimension ~~(15)~~ lies within the tolerance interval ~~(9)~~.

17. (Currently Amended) The production system ~~at least as claimed in claims~~ Claim 3 and 7, characterized in that wherein the correcting device is configured and arranged to permit a main operating mode in which the correcting device determines the current corrective interventions with reference to the current actual dimension and as a function of preceding actual dimensions, corrective interventions, or both; and

_____ wherein the correcting device ~~(4)~~, during a new production cycle, works in the preliminary operating mode ~~(17)~~ for a predetermined ~~or predeterminable~~ number of products and then changes over into the main operating mode ~~(18)~~.

18. (Currently Amended) The production system as claimed in ~~one of claims 1 to 17~~ Claim 1, ~~characterized in that~~ wherein the correcting device ~~(4)~~ is ~~designed in such a way that it can~~ configured and arranged to simultaneously correct a plurality of dimensions of the product which can influence one another.

19. (Currently Amended) The production system as claimed in ~~one of claims 1 to 18~~ Claim 1, ~~characterized in that~~ wherein the correcting device ~~(4)~~ ~~determines~~ is configured and arranged to determine the magnitude of the corrective intervention ~~(16)~~ as a function of the distance between the actual dimension ~~(15)~~ and the center of the intervention interval ~~(12)~~.